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SEQUENCE LISTING

<110> Rosetta Inpharmatics LLC
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Monks, Stephanie

<120> COMPUTER SYSTEMS AND METHODS FOR ASSOCIATING GENES WITH TRAITS
USING CROSS SPECIES DATA

<130> 9301-210-228

<140> PCT/US03/041613

<141> 2003-12-24

<150> 60/436,684

<151> 2002-12-27

<150> 60/460,343

<151> 2003-04-03

<160> 30

<170> PatentIn version 3.2

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Cys Ala Phe Leu Ser Pro Pro Gly Leu Leu Ala Leu Gln Leu Pro Phe
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gat	atc	cat	gtt	ttc	cga	ctg	gtg	acc	aac	cgc	ggg	gag	gcc	cac	ctg		2361
Asp	Ile	His	Val	Phe	Arg	Leu	Val	Thr	Asn	Arg	Gly	Glu	Ala	His	Leu		
755					760					765					770		
gag	ctg	aat	gcc	ttc	cgt	agg	aag	cat	gac	tgt	gcc	ctg	gtc	atc	tct		2409
Glu	Leu	Asn	Ala	Phe	Arg	Arg	Lys	His	Asp	Cys	Ala	Leu	Val	Ile	Ser		
				775					780					785			
gga	gac	tcc	ctg	gag	gtt	tgc	ctc	aaa	tac	tat	gag	tac	gag	ttc	atg		2457
Gly	Asp	Ser	Leu	Glu	Val	Cys	Leu	Lys	Tyr	Tyr	Glu	Tyr	Glu	Phe	Met		
			790					795					800				
gaa	ctg	gcc	tgc	cag	tgc	ccg	gct	gtg	gtg	tgc	tgc	cgc	tgt	gcc	cca		2505
Glu	Leu	Ala	Cys	Gln	Cys	Pro	Ala	Val	Val	Cys	Cys	Arg	Cys	Ala	Pro		
		805					810					815					
acc	cag	aag	gcc	cag	att	gtt	cgg	ctg	ctc	caa	gaa	cgc	acc	ggg	aaa		2553
Thr	Gln	Lys	Ala	Gln	Ile	Val	Arg	Leu	Leu	Gln	Glu	Arg	Thr	Gly	Lys		
	820					825					830						
ctc	acc	tgt	gca	gta	tgg	gac	gga	ggc	aat	gac	gtc	agc	atg	atc	cag		2601
Leu	Thr	Cys	Ala	Val	Trp	Asp	Gly	Gly	Asn	Asp	Val	Ser	Met	Ile	Gln		
835					840					845					850		
gaa	tcc	gac	tgc	ggc	gtg	ggc	gtg	gag	ggc	aag	gaa	ggg	aag	cag	gcc		2649
Glu	Ser	Asp	Cys	Gly	Val	Gly	Val	Glu	Gly	Lys	Glu	Gly	Lys	Gln	Ala		
				855					860					865			
tcg	ctg	gca	gcg	gac	ttc	tcc	atc	acc	cag	ttc	aag	cat	ctc	ggc	cgc		2697
Ser	Leu	Ala	Ala	Asp	Phe	Ser	Ile	Thr	Gln	Phe	Lys	His	Leu	Gly	Arg		

870	875	880	
ttg ctc atg gtg cac ggt cgg aac agc tac aag cgc tcg gcg gcc ctc			2745
Leu Leu Met Val His Gly Arg Asn Ser Tyr Lys Arg Ser Ala Ala Leu			
885	890	895	
agt cag ttt gtg atc cac agg agc ctc tgc atc agc acc atg cag gct			2793
Ser Gln Phe Val Ile His Arg Ser Leu Cys Ile Ser Thr Met Gln Ala			
900	905	910	
gtc ttc tcg tct gtg ttc tac ttt gca tcc gtt cct ctc tac caa ggc			2841
Val Phe Ser Ser Val Phe Tyr Phe Ala Ser Val Pro Leu Tyr Gln Gly			
915	920	925	930
ttc ctg atc att ggg tat tct acc atc tac acg atg ttt ccc gtg ttc			2889
Phe Leu Ile Ile Gly Tyr Ser Thr Ile Tyr Thr Met Phe Pro Val Phe			
935	940	945	
tcc ctg gtt ttg gac aaa gac gtg aag tcg gaa gtc gcc atg ttg tat			2937
Ser Leu Val Leu Asp Lys Asp Val Lys Ser Glu Val Ala Met Leu Tyr			
950	955	960	
cct gag ctc tac aag gac ctg ctt aag ggg cgg cca ctg tcc tac aag			2985
Pro Glu Leu Tyr Lys Asp Leu Leu Lys Gly Arg Pro Leu Ser Tyr Lys			
965	970	975	
acg ttc tta att tgg gtg tta atc agc atc tat caa ggg agc acc atc			3033
Thr Phe Leu Ile Trp Val Leu Ile Ser Ile Tyr Gln Gly Ser Thr Ile			
980	985	990	
atg tac ggg gcg ctg ctg ctg ttc gag tcg gag ttt gta cac atc			3078
Met Tyr Gly Ala Leu Leu Leu Phe Glu Ser Glu Phe Val His Ile			
995	1000	1005	
gtg gca atc tcc ttc aca tcc ctc atc ctc act gag cta ctg atg			3123
Val Ala Ile Ser Phe Thr Ser Leu Ile Leu Thr Glu Leu Leu Met			
1010	1015	1020	
gtg gcg ctc acc atc cag acg tgg cac tgg ctc atg aca gtg gcc			3168
Val Ala Leu Thr Ile Gln Thr Trp His Trp Leu Met Thr Val Ala			
1025	1030	1035	
gag cta ctc agc ctg gcc tgc tac att gcctccctgg tgttcctcca			3215
Glu Leu Leu Ser Leu Ala Cys Tyr Ile			
1040	1045		
tgagttcatc gatgtctact tcattgccac cctgtcattc ctctggaagg tgtccgtcat			3275
caccttggtc agctgtctcc ccctctatgt cctcaagtac ctgcggagac ggttctcccc			3335
accagctac tcgaagctca cttcctaagc tgcagggctg cctcgggcag ggcctccggc			3395
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gctaagctgt gctgaggggg aagacgtggg accggatggc ccgtctgagg tttgtggggt			3635
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<400> 10

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Gly Ala Arg Asp Leu Ala Pro Ala Leu Arg Ala Arg Pro Ala Arg Cys
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Arg Arg Leu Leu Pro Leu Pro Arg Gly Gly Ala Glu Ala Ala Gly Ser
 35 40 45

Ala Gly Gly Ala Ala Gly Gly Asp Met Thr Asp Ser Ile Pro Leu Gln
 50 55 60

Pro Val Arg His Lys Lys Arg Val Asp Ser Arg Pro Arg Ala Gly Cys
 65 70 75 80

Cys Glu Trp Leu Arg Cys Cys Gly Gly Gly Glu Pro Arg Pro Arg Thr
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Val Trp Leu Gly His Pro Glu Lys Arg Asp Gln Arg Tyr Pro Arg Asn
 100 105 110

Val Ile Asn Asn Gln Lys Tyr Asn Phe Phe Thr Phe Leu Pro Gly Val
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Leu Phe Ser Gln Phe Arg Tyr Phe Phe Asn Phe Tyr Phe Leu Leu Leu
 130 135 140

Ala Cys Ser Gln Phe Val Pro Glu Met Arg Leu Gly Ala Leu Tyr Thr
 145 150 155 160

Tyr Trp Val Pro Leu Gly Phe Val Leu Ala Val Thr Ile Ile Arg Glu
 165 170 175

Ala Val Glu Glu Ile Arg Cys Tyr Val Arg Asp Lys Glu Met Asn Ser
 180 185 190

Gln Val Tyr Ser Arg Leu Thr Ser Arg Gly Thr Val Lys Val Lys Ser
 195 200 205

Ser Asn Ile Gln Val Gly Asp Leu Ile Leu Val Glu Lys Asn Gln Arg
 210 215 220

Val Pro Ala Asp Met Ile Phe Leu Arg Thr Ser Glu Lys Asn Gly Ser
 225 230 235 240

Cys Phe Leu Arg Thr Asp Gln Leu Asp Gly Glu Thr Asp Trp Lys Leu
 245 250 255

Arg Leu Pro Val Ala Cys Thr Gln Arg Leu Pro Thr Ala Ala Asp Leu
 260 265 270

Leu Gln Ile Arg Ser Tyr Val Tyr Ala Glu Lys Pro Asn Ile Asp Ile
 275 280 285

His Asn Phe Leu Gly Thr Phe Thr Arg Glu Asn Ser Asp Pro Pro Ile
 290 295 300

Ser Glu Ser Leu Ser Ile Glu Asn Thr Leu Trp Ala Gly Thr Val Ile
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Ala Ser Gly Thr Val Val Gly Val Val Leu Tyr Thr Gly Arg Lys Leu
 325 330 335

Arg Ser Val Met Asn Thr Ser Asp Pro Arg Ser Lys Ile Gly Leu Phe
 340 345 350

Asp Leu Glu Val Asn Cys Leu Thr Lys Ile Leu Phe Gly Ala Leu Val
 355 360 365

Val Val Ser Leu Val Met Val Ala Leu Gln His Phe Ala Gly Arg Trp
 370 375 380

Tyr Leu Gln Ile Ile Arg Phe Leu Leu Leu Phe Ser Asn Ile Ile Pro
 385 390 395 400

Ile Ser Leu Arg Val Asn Leu Asp Met Gly Lys Ile Val Tyr Ser Trp
 405 410 415

Val Ile Arg Arg Asp Ser Lys Ile Pro Gly Thr Val Val Arg Ser Ser
 420 425 430

Thr Ile Pro Glu Gln Leu Gly Arg Ile Ser Tyr Leu Leu Thr Asp Lys
 435 440 445

Thr Gly Thr Leu Thr Gln Asn Glu Met Val Phe Lys Arg Leu His Leu

450		455		460															
Gly	Thr	Val	Ala	Tyr	Gly	Leu	Asp	Ser	Met	Asp	Glu	Val	Gln	Ser	His				
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Gly	Pro	Thr	Val	Thr	Thr	Lys	Val	Arg	Arg	Thr	Met	Ser	Ser	Arg	Val				
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His	Glu	Ala	Val	Lys	Ala	Ile	Ala	Leu	Cys	His	Asn	Val	Thr	Pro	Val				
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Tyr	Glu	Ser	Asn	Gly	Val	Thr	Asp	Gln	Ala	Glu	Ala	Glu	Lys	Gln	Phe				
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Glu	Asp	Ser	Cys	Arg	Val	Tyr	Gln	Ala	Ser	Ser	Pro	Asp	Glu	Val	Ala				
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Leu	Val	Gln	Trp	Thr	Glu	Ser	Val	Gly	Leu	Thr	Leu	Val	Gly	Arg	Asp				
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Gln	Ser	Ser	Met	Gln	Leu	Arg	Thr	Pro	Gly	Asp	Gln	Val	Leu	Asn	Leu				
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Thr	Ile	Leu	Gln	Val	Phe	Pro	Phe	Thr	Tyr	Glu	Ser	Lys	Arg	Met	Gly				
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Gly	Ala	Asp	Val	Val	Met	Ala	Gly	Ile	Val	Gln	Tyr	Asn	Asp	Trp	Leu				
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Glu	Glu	Glu	Cys	Gly	Asn	Met	Ala	Arg	Glu	Gly	Leu	Arg	Val	Leu	Val				
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Val	Ala	Lys	Lys	Ser	Leu	Thr	Glu	Glu	Gln	Tyr	Gln	His	Phe	Glu	Ala				
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Arg	Tyr	Val	Gln	Ala	Lys	Leu	Ser	Val	His	Asp	Arg	Ser	Leu	Lys	Val				
		675					680					685							
Ala	Thr	Val	Ile	Glu	Ser	Leu	Glu	Met	Glu	Met	Glu	Leu	Leu	Cys	Leu				
	690					695					700								

Thr	Gly	Val	Glu	Asp	Gln	Leu	Gln	Ala	Asp	Val	Arg	Pro	Thr	Leu	Glu	705	710	715	720
Thr	Leu	Arg	Asn	Ala	Gly	Ile	Lys	Val	Trp	Met	Leu	Thr	Gly	Asp	Lys	725	730	735	
Leu	Glu	Thr	Ala	Thr	Cys	Thr	Ala	Lys	Asn	Ala	His	Leu	Val	Thr	Arg	740	745	750	
Asn	Gln	Asp	Ile	His	Val	Phe	Arg	Leu	Val	Thr	Asn	Arg	Gly	Glu	Ala	755	760	765	
His	Leu	Glu	Leu	Asn	Ala	Phe	Arg	Arg	Lys	His	Asp	Cys	Ala	Leu	Val	770	775	780	
Ile	Ser	Gly	Asp	Ser	Leu	Glu	Val	Cys	Leu	Lys	Tyr	Tyr	Glu	Tyr	Glu	785	790	795	800
Phe	Met	Glu	Leu	Ala	Cys	Gln	Cys	Pro	Ala	Val	Val	Cys	Cys	Arg	Cys	805	810	815	
Ala	Pro	Thr	Gln	Lys	Ala	Gln	Ile	Val	Arg	Leu	Leu	Gln	Glu	Arg	Thr	820	825	830	
Gly	Lys	Leu	Thr	Cys	Ala	Val	Trp	Asp	Gly	Gly	Asn	Asp	Val	Ser	Met	835	840	845	
Ile	Gln	Glu	Ser	Asp	Cys	Gly	Val	Gly	Val	Glu	Gly	Lys	Glu	Gly	Lys	850	855	860	
Gln	Ala	Ser	Leu	Ala	Ala	Asp	Phe	Ser	Ile	Thr	Gln	Phe	Lys	His	Leu	865	870	875	880
Gly	Arg	Leu	Leu	Met	Val	His	Gly	Arg	Asn	Ser	Tyr	Lys	Arg	Ser	Ala	885	890	895	
Ala	Leu	Ser	Gln	Phe	Val	Ile	His	Arg	Ser	Leu	Cys	Ile	Ser	Thr	Met	900	905	910	
Gln	Ala	Val	Phe	Ser	Ser	Val	Phe	Tyr	Phe	Ala	Ser	Val	Pro	Leu	Tyr	915	920	925	
Gln	Gly	Phe	Leu	Ile	Ile	Gly	Tyr	Ser	Thr	Ile	Tyr	Thr	Met	Phe	Pro	930	935	940	

Val Phe Ser Leu Val Leu Asp Lys Asp Val Lys Ser Glu Val Ala Met
 945 950 955 960

Leu Tyr Pro Glu Leu Tyr Lys Asp Leu Leu Lys Gly Arg Pro Leu Ser
 965 970 975

Tyr Lys Thr Phe Leu Ile Trp Val Leu Ile Ser Ile Tyr Gln Gly Ser
 980 985 990

Thr Ile Met Tyr Gly Ala Leu Leu Leu Phe Glu Ser Glu Phe Val His
 995 1000 1005

Ile Val Ala Ile Ser Phe Thr Ser Leu Ile Leu Thr Glu Leu Leu
 1010 1015 1020

Met Val Ala Leu Thr Ile Gln Thr Trp His Trp Leu Met Thr Val
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Ala Glu Leu Leu Ser Leu Ala Cys Tyr Ile
 1040 1045

<210> 11
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 <212> PRT
 <213> Homo sapiens

<400> 11

Met Thr Asp Asn Ile Pro Leu Gln Pro Val Arg Gln Lys Lys Arg Met
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Asp Ser Arg Pro Arg Ala Gly Cys Cys Glu Trp Leu Arg Cys Cys Gly
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Gly Gly Glu Ala Arg Pro Arg Thr Val Trp Leu Gly His Pro Glu Lys
 35 40 45

Arg Asp Gln Arg Tyr Pro Arg Asn Val Ile Asn Asn Gln Lys Tyr Asn
 50 55 60

Phe Phe Thr Phe Leu Pro Gly Val Leu Phe Asn Gln Phe Lys Tyr Phe
 65 70 75 80

Phe Asn Leu Tyr Phe Leu Leu Leu Ala Cys Ser Gln Phe Val Pro Glu
 85 90 95

Met Arg Leu Gly Ala Leu Tyr Thr Tyr Trp Val Pro Leu Gly Phe Val

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Leu	Ala	Val	Thr	Val	Ile	Arg	Glu	Ala	Val	Glu	Glu	Ile	Arg	Cys	Tyr
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Val	Arg	Asp	Lys	Glu	Val	Asn	Ser	Gln	Val	Tyr	Ser	Arg	Leu	Thr	Ala
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Arg	Gly	Thr	Val	Lys	Val	Lys	Ser	Ser	Asn	Ile	Gln	Val	Gly	Asp	Leu
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Ile	Ile	Val	Glu	Lys	Asn	Gln	Arg	Val	Pro	Ala	Asp	Met	Ile	Phe	Leu
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Arg	Thr	Ser	Glu	Lys	Asn	Gly	Ser	Cys	Phe	Leu	Arg	Thr	Asp	Gln	Leu
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Asp	Gly	Glu	Thr	Asp	Trp	Lys	Leu	Arg	Leu	Pro	Val	Ala	Cys	Thr	Gln
		195					200					205			
Arg	Leu	Pro	Thr	Ala	Ala	Asp	Leu	Leu	Gln	Ile	Arg	Ser	Tyr	Val	Tyr
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Ala	Glu	Glu	Pro	Asn	Ile	Asp	Ile	His	Asn	Phe	Val	Gly	Thr	Phe	Thr
225					230					235					240
Arg	Glu	Asp	Ser	Asp	Pro	Pro	Ile	Ser	Glu	Ser	Leu	Ser	Ile	Glu	Asn
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Thr	Leu	Trp	Ala	Gly	Thr	Val	Val	Ala	Ser	Gly	Thr	Val	Val	Gly	Val
			260					265					270		
Val	Leu	Tyr	Thr	Gly	Arg	Glu	Leu	Arg	Ser	Val	Met	Asn	Thr	Ser	Asn
		275					280					285			
Pro	Arg	Ser	Lys	Ile	Gly	Leu	Phe	Asp	Leu	Glu	Val	Asn	Cys	Leu	Thr
	290					295					300				
Lys	Ile	Leu	Phe	Gly	Ala	Leu	Val	Val	Val	Ser	Leu	Val	Met	Val	Ala
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Leu	Gln	His	Phe	Ala	Gly	Arg	Trp	Tyr	Leu	Gln	Ile	Ile	Arg	Phe	Leu
				325					330					335	
Leu	Leu	Phe	Ser	Asn	Ile	Ile	Pro	Ile	Ser	Leu	Arg	Val	Asn	Leu	Asp
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Met Gly Lys Ile Val Tyr Ser Trp Val Ile Arg Arg Asp Ser Lys Ile
355 360 365

Pro Gly Thr Val Val Arg Ser Ser Thr Ile Pro Glu Gln Leu Gly Arg
370 375 380

Ile Ser Tyr Leu Leu Thr Asp Lys Thr Gly Thr Leu Thr Gln Asn Glu
385 390 395 400

Met Ile Phe Lys Arg Leu His Leu Gly Thr Val Ala Tyr Gly Leu Asp
405 410 415

Ser Met Asp Glu Val Gln Ser His Ile Phe Ser Ile Tyr Thr Gln Gln
420 425 430

Ser Gln Asp Pro Pro Ala Gln Lys Gly Pro Thr Leu Thr Thr Lys Val
435 440 445

Arg Arg Thr Met Ser Ser Arg Val His Glu Ala Val Lys Ala Ile Ala
450 455 460

Leu Cys His Asn Val Thr Pro Val Tyr Glu Ser Asn Gly Val Thr Asp
465 470 475 480

Gln Ala Glu Ala Glu Lys Gln Tyr Glu Asp Ser Cys Arg Val Tyr Gln
485 490 495

Ala Ser Ser Pro Asp Glu Val Ala Leu Val Gln Trp Thr Glu Ser Val
500 505 510

Gly Leu Thr Leu Val Gly Arg Asp Gln Ser Ser Met Gln Leu Arg Thr
515 520 525

Pro Gly Asp Gln Ile Leu Asn Phe Thr Ile Leu Gln Ile Phe Pro Phe
530 535 540

Thr Tyr Glu Ser Lys Arg Met Gly Ile Ile Val Arg Asp Glu Ser Thr
545 550 555 560

Gly Glu Ile Thr Phe Tyr Met Lys Gly Ala Asp Val Val Met Ala Gly
565 570 575

Ile Val Gln Tyr Asn Asp Trp Leu Glu Glu Glu Cys Gly Asn Met Ala
580 585 590

Arg Glu Gly Leu Arg Val Leu Val Val Ala Lys Lys Ser Leu Ala Glu
595 600 605

Glu Gln Tyr Gln Asp Phe Glu Ala Arg Tyr Val Gln Ala Lys Leu Ser
610 615 620

Val His Asp Arg Ser Leu Lys Val Ala Thr Val Ile Glu Ser Leu Glu
625 630 635 640

Met Glu Met Glu Leu Leu Cys Leu Thr Gly Val Glu Asp Gln Leu Gln
645 650 655

Ala Asp Val Arg Pro Thr Leu Glu Thr Leu Arg Asn Ala Gly Ile Lys
660 665 670

Val Trp Met Leu Thr Gly Asp Lys Leu Glu Thr Ala Thr Cys Thr Ala
675 680 685

Lys Asn Ala His Leu Val Thr Arg Asn Gln Asp Ile His Val Phe Arg
690 695 700

Leu Val Thr Asn Arg Gly Glu Ala His Leu Glu Leu Asn Ala Phe Arg
705 710 715 720

Arg Lys His Asp Cys Ala Leu Val Ile Ser Gly Asp Ser Leu Glu Val
725 730 735

Cys Leu Lys Tyr Tyr Glu Tyr Glu Phe Met Glu Leu Ala Cys Gln Cys
740 745 750

Pro Ala Val Val Cys Cys Arg Cys Ala Pro Thr Gln Lys Ala Gln Ile
755 760 765

Val Arg Leu Leu Gln Glu Arg Thr Gly Lys Leu Thr Cys Ala Val Gly
770 775 780

Asp Gly Gly Asn Asp Val Ser Met Ile Gln Glu Ser Asp Cys Gly Val
785 790 795 800

Gly Val Glu Gly Lys Glu Gly Lys Gln Ala Ser Leu Ala Ala Asp Phe
805 810 815

Ser Ile Thr Gln Phe Lys His Leu Gly Arg Leu Leu Met Val His Gly
820 825 830

Arg Asn Ser Tyr Lys Arg Ser Ala Ala Leu Ser Gln Phe Val Ile His
835 840 845

Arg Ser Leu Cys Ile Ser Thr Met Gln Ala Val Phe Ser Ser Val Phe
850 855 860

Tyr Phe Ala Ser Val Pro Leu Tyr Gln Gly Phe Leu Ile Ile Gly Tyr
865 870 875 880

Ser Thr Ile Tyr Thr Met Phe Pro Val Phe Ser Leu Val Leu Asp Lys
885 890 895

Asp Val Lys Ser Glu Val Ala Met Leu Tyr Pro Glu Leu Tyr Lys Asp
900 905 910

Leu Leu Lys Gly Arg Pro Leu Ser Tyr Lys Thr Phe Leu Ile Trp Val
915 920 925

Leu Ile Ser Ile Tyr Gln Gly Ser Thr Ile Met Tyr Gly Ala Leu Leu
930 935 940

Leu Phe Glu Ser Glu Phe Val His Ile Val Ala Ile Ser Phe Thr Ser
945 950 955 960

Leu Ile Leu Thr Glu Leu Leu Met Val Ala Leu Thr Ile Gln Thr Trp
965 970 975

His Trp Leu Met Thr Val Ala Glu Leu Leu Ser Leu Ala Cys Tyr Ile
980 985 990

Ala Ser Leu Val Phe Leu His Glu Phe Ile Asp Val Tyr Phe Ile Ala
995 1000 1005

Thr Leu Ser Phe Leu Trp Lys Val Ser Val Ile Thr Leu Val Ser
1010 1015 1020

Cys Leu Pro Leu Tyr Val Leu Lys Tyr Leu Arg Arg Arg Phe Ser
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Pro Pro Ser Tyr Ser Lys Leu Thr Ser
1040 1045

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<211> 3141
<212> DNA
<213> Homo sapiens

<400> 12

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Val Glu Glu Leu Arg Ala Ala Gly Asn Gln Ser Phe Arg Asn Gly Gln	
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Tyr Ala Glu Ala Ser Ala Leu Tyr Glu Arg Ala Leu Arg Leu Leu Gln	
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Arg Ala Ala Cys Tyr Leu Lys Asp Gly Asn Cys Thr Asp Cys Ile Lys	
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Asp Cys Thr Ser Ala Leu Ala Leu Val Pro Phe Ser Ile Lys Pro Leu	
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Leu Arg Arg Ala Ser Ala Tyr Glu Ala Leu Glu Lys Tyr Ala Leu Ala	
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Tyr Val Asp Tyr Lys Thr Val Leu Gln Ile Asp Asn Ser Val Ala Ser	
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Ser Ala Gln Lys Arg Trp Asn Ser Leu Pro Ser Asp Asn His Lys Glu	
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Glu Glu Ser Val Leu Tyr Ser Asn Arg Ala Ala Cys Tyr Leu Lys Asp
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Gly Asn Cys Thr Asp Cys Ile Lys Asp Cys Thr Ser Ala Leu Ala Leu
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Val Pro Phe Ser Ile Lys Pro Leu Leu Arg Arg Ala Ser Ala Tyr Glu
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Ala Leu Glu Lys Tyr Ala Leu Ala Tyr Val Asp Tyr Lys Thr Val Leu
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Gln Ile Asp Asn Ser Val Ala Ser Ala Leu Glu Gly Ile Asn Arg Ile
 115 120 125

Thr Arg Ala Leu Met Asp Ser Leu Gly Pro Glu Trp Arg Leu Lys Leu
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Pro Pro Ile Pro Val Val Pro Val Ser Ala Gln Lys Arg Trp Asn Ser
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Leu Pro Ser Asp Asn His Lys Glu Thr Ala Lys Thr Lys Ser Lys Glu
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Ala Thr Ala Thr Lys Ser Arg Val Pro Ser Ala Gly Asp Val Glu Arg
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Ala Lys Ala Leu Lys Glu Glu Gly Asn Asp Leu Val Lys Lys Gly Asn
 195 200 205

His Lys Lys Ala Ile Glu Lys Tyr Ser Glu Ser Leu Leu Cys Ser Ser
 210 215 220

Leu Glu Ser Ala Thr Tyr Ser Asn Arg Ala Leu Cys His Leu Val Leu
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Lys Gln Tyr Lys Glu Ala Val Lys Asp Cys Thr Glu Ala Leu Lys Leu
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Asp Gly Lys Asn Val Lys Ala Phe Tyr Arg Arg Ala Gln Ala Tyr Lys
 260 265 270

Ala Leu Lys Asp Tyr Lys Ser Ser Leu Ser Asp Ile Ser Ser Leu Leu
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<210> 15
 <211> 309
 <212> PRT
 <213> Homo sapiens

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Glu Glu Ser Val Leu Tyr Ser Asn Arg Ala Ala Cys His Leu Lys Asp
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Gly Asn Cys Arg Asp Cys Ile Lys Asp Cys Thr Ser Ala Leu Ala Leu
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Val Pro Phe Ser Ile Lys Pro Leu Leu Arg Arg Ala Ser Ala Tyr Glu
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Ala Leu Glu Lys Tyr Pro Met Ala Tyr Val Asp Tyr Lys Thr Val Leu

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225					230					235					240
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<400> 17

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Glu Arg Ala Leu Arg Leu Leu Gln Ala Arg Gly Ser Ala Asp Pro Glu
 35 40 45

Glu Glu Ser Val Leu Tyr Ser Asn Arg Ala Ala Cys Tyr Leu Lys Asp
 50 55 60

Gly Asn Cys Thr Asp Cys Ile Lys Asp Cys Thr Ser Ala Leu Ala Leu
 65 70 75 80

Val Pro Phe Ser Ile Lys Pro Leu Leu Arg Arg Ala Ser Ala Tyr Glu
 85 90 95

Ala Leu Glu Lys Tyr Ala Leu Ala Tyr Val Asp Tyr Lys Thr Val Leu
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Gln Ile Asp Asn Ser Val Ala Ser Ala Leu Glu Gly Ile Asn Arg Ile
 115 120 125

Thr Arg Ala Leu Met Asp Ser Leu Gly Pro Glu Trp Arg Leu Lys Leu
 130 135 140

Pro Pro Ile Pro Val Val Pro Val Ser Ala Gln Lys Arg Trp Asn Ser
 145 150 155 160

Leu Pro Ser Asp Asn His Lys Glu Thr Ala Lys Thr Lys Ser Lys Glu
 165 170 175

Ala Thr Ala Thr Lys Ser Arg Val Pro Ser Ala Gly Asp Val Glu Arg
180 185 190

Ala Lys Ala Leu Lys Glu Glu Gly Asn Asp Leu Val Lys Lys Gly Asn
195 200 205

His Lys Lys Ala Ile Glu Lys Tyr Ser Glu Ser Leu Leu Cys Ser Ser
210 215 220

Leu Glu Ser Ala Thr Tyr Ser Asn Arg Ala Leu Cys His Leu Val Leu
225 230 235 240

Lys Gln Tyr Lys Glu Ala Val Lys Asp Cys Thr Glu Ala Leu Lys Leu
245 250 255

Asp Gly Lys Asn Val Lys Ala Phe Tyr Arg Arg Ala Gln Ala Tyr Lys
260 265 270

Ala Leu Lys Asp Tyr Lys Ser Ser Leu Ser Asp Ile Ser Ser Leu Leu
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Gln Ile Glu Pro Arg Asn Gly Pro Ala Gln Lys Leu Arg Gln Glu Val
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Asn Gln Asn Met Asn
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<210> 18
<211> 309
<212> PRT
<213> Homo sapiens

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Gly Arg Ala Leu Arg Val Leu Gln Ala Gln Gly Ser Ser Asp Pro Glu
35 40 45

Glu Glu Ser Val Leu Tyr Ser Asn Arg Ala Ala Cys His Trp Lys Asn
50 55 60

Gly Asn Cys Arg Asp Cys Ile Lys Asp Cys Thr Ser Ala Leu Ala Leu
65 70 75 80

Val Pro Phe Ser Ile Lys Pro Leu Leu Arg Arg Ala Ser Ala Tyr Glu
 85 90 95

Ala Leu Glu Lys Tyr Pro Met Ala Tyr Val Asp Tyr Lys Thr Val Leu
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Gln Ile Asp Asp Asn Val Thr Ser Ala Val Glu Gly Ile Asn Arg Met
 115 120 125

Thr Arg Ala Leu Met Asp Ser Leu Gly Pro Glu Trp Arg Leu Lys Leu
 130 135 140

Pro Ser Phe Pro Leu Val Pro Val Ser Ala Gln Lys Arg Trp Asn Phe
 145 150 155 160

Leu Pro Ser Glu Asn His Lys Glu Met Ala Lys Ser Lys Ser Lys Glu
 165 170 175

Thr Thr Ala Thr Lys Asn Arg Val Pro Ser Ala Gly Asp Val Glu Lys
 180 185 190

Ala Arg Val Leu Lys Glu Glu Gly Asn Glu Leu Val Lys Lys Gly Asn
 195 200 205

His Lys Lys Ala Ile Glu Lys Tyr Ser Glu Ser Leu Leu Cys Ser Asn
 210 215 220

Leu Glu Ser Ala Thr Tyr Ser Asn Arg Ala Leu Cys Tyr Leu Val Leu
 225 230 235 240

Lys Gln Tyr Thr Glu Ala Val Lys Asp Cys Thr Glu Ala Leu Lys Leu
 245 250 255

Asp Gly Lys Asn Val Lys Ala Phe Tyr Arg Arg Ala Gln Ala His Lys
 260 265 270

Ala Leu Lys Asp Tyr Lys Ser Ser Phe Ala Asp Ile Ser Asn Leu Leu
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 <212> DNA
 <213> Homo sapiens

<400> 20	
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ggaaaagtcc ttgcaccatg tagatcagcg tccccactt tggcatcccg gccggccggg	120
gacctcccag tctgcggcca tgaacgcgag cagcgagggc gagagcttcg cgggctcggg	180
gcaaattcca ggtggcacia cgggtgctggg ggagctgact cccgacatcc atatctgcgg	240
catctgcaag cagcagttta acaacctgga tgcctttgta gtcacaagc aaagtggctg	300
ccagctgaca ggcacatccg cagcagcccc cagcacgggc cagtttgtat cggaggaaac	360
agtgcctgcc acccagactc agaccaccac cagaaccatc acctcggaga cccagacaat	420
cacagtttca gctccagaat ttgtttttga acatggctat caaacttacc tgcccacgga	480
aagtaatgaa aaccagacag ccactgtcat ctctctccct gccaaagtcac gcacaaaaa	540
gccacaaca ccacctgctc agaaaaggct taactgttgc tatccagggt gccaatcaa	600
gactgcttat ggcatgaagg acatggagcg gcatttataa attcacacgg gagacaaacc	660
ccataagtgt gaagtctgtg gcaagtgtt tagccggaaa gacaagctga aaactcacat	720
gcggtgccac acgggcgtga agccctacaa gtgtaagacg tgtgactacg ccgctgccga	780

cagcagcagc	ctcaacaagc	acctgaggat	ccactcggac	gagcggccct	tcaaatgcc	840
gatctgcccc	tacgccagcc	gcaactccag	ccagctcact	gtccacctgc	gatcccacac	900
gggggaacgcc	cccttccagt	gctggctctg	tagcgccaag	ttcaaaatca	gctcggactt	960
gaaaaggcac	atgcgggtgc	actcggggga	gaagcctttc	aagtgcgagt	tctgcaatgt	1020
ccgctgcacc	atgaagggga	acctcaagtc	gcacatccgt	atcaagcaca	gcgggaataa	1080
cttcaagtgt	cctcattgcg	acttctctgg	tgacagcaaa	gccaccctcc	ggaagcacag	1140
ccgcgtgcac	cagtcggagc	atcctgagaa	gtgctcggaa	tgacagctact	cctgctccag	1200
caaggccgcc	ctgcgcatcc	acgagcgtat	ccactgcacc	gaccgccctt	tcaagtgcaa	1260
ctactgcagc	ttcgacacca	aacagcccag	caacctgagc	aagcacatga	agaagttcca	1320
cggggacatg	gttaagactg	aggctctaga	gaggaaggac	accggcaggc	agagcagccg	1380
gcaggtggcc	aagctggatg	ccaagaagag	tttccactgc	gatatatgcg	atgcctcctt	1440
catgcgggag	gactcgctcc	gcagccacaa	gagacagcac	agtgagtaca	atgagagtaa	1500
gaactcggac	gtgaccgttc	tccagtttca	gatcgacccc	agcaagcagc	ccgccacgcc	1560
cctcactgtg	ggacacctcc	aggtgcccct	ccagcccagc	caagtgcccc	agttcagcga	1620
gggaagagtc	aaaatcatcg	ttgggcatca	ggtgccccag	gcgaacacca	tcgtccaggc	1680
tgccgctgct	gcagtgaaca	tcgtcccgcc	tgcccttggtg	gcccagaacc	cagaggaact	1740
cccagggaac	agccgggtgc	agatcctgcg	ccaggtcagt	ctgatcgccc	cccctcagtc	1800
ctcgcggtgt	ccgagcgagg	cgggcgcaat	gaccacagccg	gctgtcctgc	tgaccacca	1860
cgagcagacg	gacggagcca	ctctgcacca	gactctcacc	cccacggcct	caggtggccc	1920
ccaggaaggc	tctggcaatc	aaactttcat	taccagttcg	ggtattactt	gcactgactt	1980
tgaaggccta	aacgccttga	ttcaggaggg	gacagcagaa	gtgacagtgg	tgagcgatgg	2040
aggccagAAC	atcgcagtgg	ccaccacagc	gccaccggtc	ttctcctcct	cttcccagca	2100
agaactaccc	aagcagacct	actccatcat	tcaaggggca	gcccacccag	ctttgctctg	2160
tcccgccgac	tccattccag	attagtgtct	aaaaaaca	aggagtgggg	gaaaggaatt	2220
gagaaaaaga	aatcttaagt	agaattctct	aaaaggtttg	ctcttaaatgt	tttctttggt	2280
ttgttttggt	tttgagacgg	agtctcgctc	tgtttcccag	gctggagtgc	agtggcgcta	2340
tcttggtcca	ctgcaacgtc	cgcctcccag	gttcaagcga	ttctcatgcc	tcggccctcc	2400
gagtagctgg	gaccacaggt	gtacgacatc	atgactggct	aatttttgta	tatttaatat	2460
aggcgggggt	tcatcatgtt	gaactcctga	cctcaagtga	tctgcccacc	tcagcctccc	2520
aaagtgtctg	gattacaggt	gtgagccacc	atgcctggcc	gtggtttgct	cttaatgttt	2580
ttaaggatgg	ttgtgaatcc	ccctggcccc	ataataaatt	gtaattttat	actgcttact	2640

ataatttttt taacactgta acaactttga gaccacctct gaatcgctgc attataactg 2700
 ttgtagaatc ttaaagtgtta ccaagatgat tccaatgagg ggttggaatt aaatgcatta 2760
 agtagtgaac tcatgtgttt gtttccaact tgattttcca actctaataa aggtttctgt 2820
 ccatcttatt acatttgtgt agtaaattgg acttcccagc ctctcttttg cccattctg 2880
 gaatactccc cagagtttgg ggggtgtcat gttttatata tgtaagtctg ttggcatgaa 2940
 ggaccatttt ctacataata tgacatggat acttgaccca aaaaaaatgt ttagtgctaa 3000
 tgagcagaaa atgaatgggt ccataataaa ttgatattctg attaaaaat 3048

<210> 21
 <211> 473
 <212> PRT
 <213> Mus musculus

<400> 21

Met Asn Ala Ser Val Glu Gly Asp Thr Phe Ser Gly Ser Met Gln Ile
 1 5 10 15

Pro Gly Gly Thr Thr Val Val Val Glu Leu Ala Pro Asp Ile His Ile
 20 25 30

Cys Gly Leu Cys Lys Gln His Phe Ser Asn Leu Asp Ala Phe Val Ala
 35 40 45

His Lys Gln Ser Gly Cys Gln Leu Thr Thr Thr Pro Val Thr Ala Pro
 50 55 60

Ser Thr Val Gln Phe Val Ala Glu Glu Thr Glu Pro Ala Thr Gln Thr
 65 70 75 80

Thr Thr Thr Thr Ile Ser Ser Glu Thr Gln Thr Ile Thr Val Ser Ala
 85 90 95

Pro Glu Phe Val Phe Glu His Gly Tyr Gln Thr Tyr Leu Pro Thr Glu
 100 105 110

Ser Thr Asp Asn Gln Thr Ala Thr Val Ile Ser Leu Pro Thr Lys Ser
 115 120 125

Arg Thr Lys Lys Pro Thr Ala Pro Pro Ala Gln Lys Arg Leu Gly Cys
 130 135 140

Cys Tyr Pro Gly Cys Gln Phe Lys Thr Ala Tyr Gly Met Lys Asp Met
 145 150 155 160

Glu Arg His Leu Lys Ile His Thr Gly Asp Lys Pro His Lys Cys Glu
 165 170 175

Val Cys Gly Lys Cys Phe Ser Arg Lys Asp Lys Leu Lys Thr His Met
 180 185 190

Arg Cys His Thr Gly Val Lys Pro Tyr Lys Cys Lys Thr Cys Asp Tyr
 195 200 205

Ala Ala Ala Asp Ser Ser Ser Leu Asn Lys His Leu Arg Ile His Ser
 210 215 220

Asp Glu Arg Pro Phe Lys Cys Gln Ile Cys Pro Tyr Ala Ser Arg Asn
 225 230 235 240

Ser Ser Gln Leu Thr Val His Leu Arg Ser His Thr Gly Asp Ala Pro
 245 250 255

Phe Gln Cys Trp Leu Cys Ser Ala Lys Phe Lys Ile Ser Ser Asp Leu
 260 265 270

Lys Arg His Met Arg Val His Ser Gly Glu Lys Pro Phe Lys Cys Glu
 275 280 285

Phe Cys Asn Val Arg Cys Thr Met Lys Gly Asn Leu Lys Ser His Ile
 290 295 300

Arg Ile Lys His Ser Gly Asn Asn Phe Lys Cys Pro His Cys Asp Phe
 305 310 315 320

Leu Gly Asp Ser Lys Ser Thr Leu Arg Lys His Ser Arg Leu His Gln
 325 330 335

Ser Glu His Pro Glu Lys Cys Pro Glu Cys Ser Tyr Ser Cys Ser Ser
 340 345 350

Lys Ala Ala Leu Arg Val His Glu Arg Ile His Cys Thr Glu Arg Pro
 355 360 365

Phe Lys Cys Ser Tyr Cys Ser Phe Asp Thr Lys Gln Pro Ser Asn Leu
 370 375 380

Ser Lys His Met Lys Lys Phe His Ala Asp Met Leu Lys Asn Glu Ala
 385 390 395 400

Pro Glu Lys Lys Glu Ser Gly Arg Gln Ser Ser Arg Gln Val Ala Arg
 405 410 415

Leu Asp Ala Lys Lys Thr Phe His Cys Asp Ile Cys Asp Ala Ser Phe
 420 425 430

Met Arg Glu Asp Ser Leu Arg Ser His Lys Arg Gln His Ser Glu Tyr
 435 440 445

His Ser Lys Asn Ser Asp Val Thr Val Val Gln Leu His Leu Glu Pro
 450 455 460

Ser Lys Gln Pro Leu Arg Pro Ser Pro
 465 470

<210> 22
 <211> 473
 <212> PRT
 <213> Mus musculus

<400> 22

Met Asn Ala Ser Val Glu Gly Asp Thr Phe Ser Gly Ser Met Gln Ile
 1 5 10 15

Pro Gly Gly Thr Thr Val Val Val Glu Leu Ala Pro Asp Ile His Ile
 20 25 30

Cys Gly Leu Cys Lys Gln His Phe Ser Asn Leu Asp Ala Phe Val Ala
 35 40 45

His Lys Gln Ser Gly Cys Gln Leu Thr Thr Thr Pro Val Thr Ala Pro
 50 55 60

Ser Thr Val Gln Phe Val Ala Glu Glu Thr Glu Pro Ala Thr Gln Thr
 65 70 75 80

Thr Thr Thr Thr Ile Ser Ser Glu Thr Gln Thr Ile Thr Val Ser Ala
 85 90 95

Pro Glu Phe Val Phe Glu His Gly Tyr Gln Thr Tyr Leu Pro Thr Glu
 100 105 110

Ser Thr Asp Asn Gln Thr Ala Thr Val Ile Ser Leu Pro Thr Lys Ser
 115 120 125

Arg Thr Lys Lys Pro Thr Ala Pro Pro Ala Gln Lys Arg Leu Gly Cys

130		135		140
Cys Tyr Pro Gly Cys Gln Phe Lys Thr Ala Tyr Gly Met Lys Asp Met				
145		150		155 160
Glu Arg His Leu Lys Ile His Thr Gly Asp Lys Pro His Lys Cys Glu				
		165		170 175
Val Cys Gly Lys Cys Phe Ser Arg Lys Asp Lys Leu Lys Thr His Met				
		180		185 190
Arg Cys His Thr Gly Val Lys Pro Tyr Lys Cys Lys Thr Cys Asp Tyr				
		195		200 205
Ala Ala Ala Asp Ser Ser Ser Leu Asn Lys His Leu Arg Ile His Ser				
		210		215 220
Asp Glu Arg Pro Phe Lys Cys Gln Ile Cys Pro Tyr Ala Ser Arg Asn				
		225		230 235 240
Ser Ser Gln Leu Thr Val His Leu Arg Ser His Thr Gly Asp Ala Pro				
		245		250 255
Phe Gln Cys Trp Leu Cys Ser Ala Lys Phe Lys Ile Ser Ser Asp Leu				
		260		265 270
Lys Arg His Met Arg Val His Ser Gly Glu Lys Pro Phe Lys Cys Glu				
		275		280 285
Phe Cys Asn Val Arg Cys Thr Met Lys Gly Asn Leu Lys Ser His Ile				
		290		295 300
Arg Ile Lys His Ser Gly Asn Asn Phe Lys Cys Pro His Cys Asp Phe				
		305		310 315 320
Leu Gly Asp Ser Lys Ser Thr Leu Arg Lys His Ser Arg Leu His Gln				
		325		330 335
Ser Glu His Pro Glu Lys Cys Pro Glu Cys Ser Tyr Ser Cys Ser Ser				
		340		345 350
Lys Ala Ala Leu Arg Val His Glu Arg Ile His Cys Thr Glu Arg Pro				
		355		360 365
Phe Lys Cys Ser Tyr Cys Ser Phe Asp Thr Lys Gln Pro Ser Asn Leu				
		370		375 380

Ser Lys His Met Lys Lys Phe His Ala Asp Met Leu Lys Asn Glu Ala
 385 390 395 400

Pro Glu Lys Lys Glu Ser Gly Arg Gln Ser Ser Arg Gln Val Ala Arg
 405 410 415

Leu Asp Ala Lys Lys Thr Phe His Cys Asp Ile Cys Asp Ala Ser Phe
 420 425 430

Met Arg Glu Asp Ser Leu Arg Ser His Lys Arg Gln His Ser Glu Tyr
 435 440 445

His Ser Lys Asn Ser Asp Val Thr Val Val Gln Leu His Leu Glu Pro
 450 455 460

Ser Lys Gln Pro Leu Arg Pro Ser Pro
 465 470

<210> 23
 <211> 643
 <212> PRT
 <213> Mus musculus

<400> 23

Met Asn Ala Ser Val Glu Gly Asp Thr Phe Ser Gly Ser Met Gln Ile
 1 5 10 15

Pro Gly Gly Thr Thr Val Leu Val Glu Leu Ala Pro Asp Ile His Ile
 20 25 30

Cys Gly Leu Cys Lys Gln His Phe Ser Asn Leu Asp Ala Phe Val Ala
 35 40 45

His Lys Gln Ser Gly Cys Gln Leu Thr Thr Thr Pro Val Thr Ala Pro
 50 55 60

Ser Thr Val Gln Phe Val Ala Glu Glu Thr Glu Pro Ala Thr Gln Thr
 65 70 75 80

Thr Thr Thr Thr Ile Ser Ser Glu Thr Gln Thr Ile Thr Val Ser Ala
 85 90 95

Pro Glu Phe Val Phe Glu His Gly Tyr Gln Thr Tyr Leu Pro Thr Glu
 100 105 110

Ser Thr Asp Asn Gln Thr Ala Thr Val Ile Ser Leu Pro Thr Lys Ser
 115 120 125

Arg Thr Lys Lys Pro Thr Ala Pro Pro Ala Gln Lys Arg Leu Gly Cys
 130 135 140

Cys Tyr Pro Gly Cys Gln Phe Lys Thr Ala Tyr Gly Met Lys Asp Met
 145 150 155 160

Glu Arg His Leu Lys Ile His Thr Gly Asp Lys Pro His Lys Cys Glu
 165 170 175

Val Cys Gly Lys Cys Phe Ser Arg Lys Asp Lys Leu Lys Thr His Met
 180 185 190

Arg Cys His Thr Gly Val Lys Pro Tyr Lys Cys Lys Thr Cys Asp Tyr
 195 200 205

Ala Ala Ala Asp Ser Ser Ser Leu Asn Lys His Leu Arg Ile His Ser
 210 215 220

Asp Glu Arg Pro Phe Lys Cys Gln Ile Cys Pro Tyr Ala Ser Arg Asn
 225 230 235 240

Ser Ser Gln Leu Thr Val His Leu Arg Ser His Thr Ala Ser Val Leu
 245 250 255

Glu Asn Asp Val Gln Lys Pro Ala Gly Leu Pro Ala Glu Glu Ser Asp
 260 265 270

Ala Gln Gln Ala Pro Ala Val Thr Leu Ser Leu Glu Ala Lys Glu Arg
 275 280 285

Thr Ala Thr Leu Gly Glu Arg Thr Phe Asn Cys Arg Tyr Pro Gly Cys
 290 295 300

His Phe Lys Thr Val His Gly Met Lys Asp Leu Asp Arg His Leu Arg
 305 310 315 320

Ile His Thr Gly Asp Lys Pro His Lys Cys Glu Phe Cys Asp Lys Cys
 325 330 335

Phe Ser Arg Lys Asp Asn Leu Thr Met His Met Arg Cys His Thr Ser
 340 345 350

Val Lys Pro His Lys Cys His Leu Cys Asp Tyr Ala Ala Val Asp Ser

355

360

365

Ser Ser Leu Lys Lys His Leu Arg Ile His Ser Asp Glu Arg Pro Tyr
 370 375 380

Lys Cys Gln Leu Cys Pro Tyr Ala Ser Arg Asn Ser Ser Gln Leu Thr
 385 390 395 400

Val His Leu Arg Ser His Thr Gly Asp Thr Pro Phe Gln Cys Trp Leu
 405 410 415

Cys Ser Ala Lys Phe Lys Ile Ser Ser Asp Leu Lys Arg His Met Ile
 420 425 430

Val His Ser Gly Glu Lys Pro Phe Lys Cys Glu Phe Cys Asp Val Arg
 435 440 445

Cys Thr Met Lys Ala Asn Leu Lys Ser His Ile Arg Ile Lys His Thr
 450 455 460

Phe Lys Cys Leu His Cys Ala Phe Gln Gly Arg Asp Arg Ala Asp Leu
 465 470 475 480

Leu Glu His Ser Arg Leu His Gln Ala Asp His Pro Glu Lys Cys Pro
 485 490 495

Glu Cys Ser Tyr Ser Cys Ser Asn Pro Ala Ala Leu Arg Val His Ser
 500 505 510

Arg Val His Cys Thr Asp Arg Pro Phe Lys Cys Asp Phe Cys Ser Phe
 515 520 525

Asp Thr Lys Arg Pro Ser Ser Leu Ala Lys His Ile Asp Lys Val His
 530 535 540

Arg Glu Gly Ala Lys Thr Glu Asn Arg Ala Pro Pro Gly Lys Asp Gly
 545 550 555 560

Pro Gly Glu Ser Gly Pro His His Val Pro Asn Val Ser Thr Gln Arg
 565 570 575

Ala Phe Gly Cys Asp Lys Cys Gly Ala Ser Phe Val Arg Asp Asp Ser
 580 585 590

Leu Arg Cys His Arg Lys Gln His Ser Asp Trp Gly Glu Asn Lys Asn

595 600 605
 Ser Asn Leu Val Thr Phe Pro Ser Glu Gly Ile Ala Thr Gly Gln Leu
 610 615 620
 Gly Pro Leu Val Ser Val Gly Gln Leu Glu Ser Thr Leu Glu Pro Ser
 625 630 635 640
 His Asp Leu

 <210> 24
 <211> 272
 <212> PRT
 <213> Mus musculus

 <400> 24
 Met Asn Ala Ser Val Glu Gly Asp Thr Phe Ser Gly Ser Met Gln Ile
 1 5 10 15
 Pro Gly Gly Thr Thr Val Leu Val Glu Leu Ala Pro Asp Ile His Ile
 20 25 30
 Cys Gly Leu Cys Lys Gln His Phe Ser Asn Leu Asp Ala Phe Val Ala
 35 40 45
 His Lys Gln Ser Gly Cys Gln Leu Thr Thr Thr Pro Val Thr Ala Pro
 50 55 60
 Ser Thr Val Gln Phe Val Ala Glu Glu Thr Glu Pro Ala Thr Gln Thr
 65 70 75 80
 Thr Thr Thr Thr Ile Ser Ser Glu Thr Gln Thr Ile Thr Val Ser Ala
 85 90 95
 Pro Glu Phe Val Phe Glu His Gly Tyr Gln Thr Tyr Leu Pro Thr Glu
 100 105 110
 Ser Thr Asp Asn Gln Thr Ala Thr Val Ile Ser Leu Pro Thr Lys Ser
 115 120 125
 Arg Thr Lys Lys Pro Thr Ala Pro Pro Ala Gln Lys Arg Leu Gly Cys
 130 135 140
 Cys Tyr Pro Gly Cys Gln Phe Lys Thr Ala Tyr Gly Met Lys Asp Met
 145 150 155 160

Glu Arg His Leu Lys Ile His Thr Gly Asp Lys Pro His Lys Cys Glu
165 170 175

Val Cys Gly Lys Cys Phe Ser Arg Lys Asp Lys Leu Lys Thr His Met
180 185 190

Arg Cys His Thr Gly Val Lys Pro Tyr Lys Cys Lys Thr Cys Asp Tyr
195 200 205

Ala Ala Ala Asp Ser Ser Ser Leu Asn Lys His Leu Arg Ile His Ser
210 215 220

Asp Glu Arg Pro Phe Lys Cys Gln Ile Cys Pro Tyr Ala Ser Arg Asn
225 230 235 240

Ser Ser Gln Leu Thr Val His Leu Arg Ser His Thr Ala Trp Arg Cys
245 250 255

Asp Cys Leu Gly Ser Thr Lys Pro Trp Val Pro Ser Leu Val Thr Thr
260 265 270

<210> 25
<211> 681
<212> PRT
<213> Homo sapiens

<400> 25

Met Asn Ala Ser Ser Glu Gly Glu Ser Phe Ala Gly Ser Val Gln Ile
1 5 10 15

Pro Gly Gly Thr Thr Val Leu Val Glu Leu Thr Pro Asp Ile His Ile
20 25 30

Cys Gly Ile Cys Lys Gln Gln Phe Asn Asn Leu Asp Ala Phe Val Ala
35 40 45

His Lys Gln Ser Gly Cys Gln Leu Thr Gly Thr Ser Ala Ala Ala Pro
50 55 60

Ser Thr Val Gln Phe Val Ser Glu Glu Thr Val Pro Ala Thr Gln Thr
65 70 75 80

Gln Thr Thr Thr Arg Thr Ile Thr Ser Glu Thr Gln Thr Ile Thr Val
85 90 95

Ser Ala Pro Glu Phe Val Phe Glu His Gly Tyr Gln Thr Tyr Leu Pro

100	105	110
Thr Glu Ser Asn Glu Asn Gln Thr Ala Thr Val Ile Ser Leu Pro Ala 115 120 125		
Lys Ser Arg Thr Lys Lys Pro Thr Thr Pro Pro Ala Gln Lys Arg Leu 130 135 140		
Asn Cys Cys Tyr Pro Gly Cys Gln Phe Lys Thr Ala Tyr Gly Met Lys 145 150 155 160		
Asp Met Glu Arg His Leu Lys Ile His Thr Gly Asp Lys Pro His Lys 165 170 175		
Cys Glu Val Cys Gly Lys Cys Phe Ser Arg Lys Asp Lys Leu Lys Thr 180 185 190		
His Met Arg Cys His Thr Gly Val Lys Pro Tyr Lys Cys Lys Thr Cys 195 200 205		
Asp Tyr Ala Ala Ala Asp Ser Ser Ser Leu Asn Lys His Leu Arg Ile 210 215 220		
His Ser Asp Glu Arg Pro Phe Lys Cys Gln Ile Cys Pro Tyr Ala Ser 225 230 235 240		
Arg Asn Ser Ser Gln Leu Thr Val His Leu Arg Ser His Thr Gly Asp 245 250 255		
Ala Pro Phe Gln Cys Trp Leu Cys Ser Ala Lys Phe Lys Ile Ser Ser 260 265 270		
Asp Leu Lys Arg His Met Arg Val His Ser Gly Glu Lys Pro Phe Lys 275 280 285		
Cys Glu Phe Cys Asn Val Arg Cys Thr Met Lys Gly Asn Leu Lys Ser 290 295 300		
His Ile Arg Ile Lys His Ser Gly Asn Asn Phe Lys Cys Pro His Cys 305 310 315 320		
Asp Phe Leu Gly Asp Ser Lys Ala Thr Leu Arg Lys His Ser Arg Val 325 330 335		
His Gln Ser Glu His Pro Glu Lys Cys Ser Glu Cys Ser Tyr Ser Cys		

340	345	350
Ser Ser Lys Ala Ala Leu Arg Ile His Glu Arg Ile His Cys Thr Asp 355 360 365		
Arg Pro Phe Lys Cys Asn Tyr Cys Ser Phe Asp Thr Lys Gln Pro Ser 370 375 380		
Asn Leu Ser Lys His Met Lys Lys Phe His Gly Asp Met Val Lys Thr 385 390 395 400		
Glu Ala Leu Glu Arg Lys Asp Thr Gly Arg Gln Ser Ser Arg Gln Val 405 410 415		
Ala Lys Leu Asp Ala Lys Lys Ser Phe His Cys Asp Ile Cys Asp Ala 420 425 430		
Ser Phe Met Arg Glu Asp Ser Leu Arg Ser His Lys Arg Gln His Ser 435 440 445		
Glu Tyr Asn Glu Ser Lys Asn Ser Asp Val Thr Val Leu Gln Phe Gln 450 455 460		
Ile Asp Pro Ser Lys Gln Pro Ala Thr Pro Leu Thr Val Gly His Leu 465 470 475 480		
Gln Val Pro Leu Gln Pro Ser Gln Val Pro Gln Phe Ser Glu Gly Arg 485 490 495		
Val Lys Ile Ile Val Gly His Gln Val Pro Gln Ala Asn Thr Ile Val 500 505 510		
Gln Ala Ala Ala Ala Val Asn Ile Val Pro Pro Ala Leu Val Ala 515 520 525		
Gln Asn Pro Glu Glu Leu Pro Gly Asn Ser Arg Leu Gln Ile Leu Arg 530 535 540		
Gln Val Ser Leu Ile Ala Pro Pro Gln Ser Ser Arg Cys Pro Ser Glu 545 550 555 560		
Ala Gly Ala Met Thr Gln Pro Ala Val Leu Leu Thr Thr His Glu Gln 565 570 575		
Thr Asp Gly Ala Thr Leu His Gln Thr Leu Ile Pro Thr Ala Ser Gly 580 585 590		

Gly Pro Gln Glu Gly Ser Gly Asn Gln Thr Phe Ile Thr Ser Ser Gly
 595 600 605

Ile Thr Cys Thr Asp Phe Glu Gly Leu Asn Ala Leu Ile Gln Glu Gly
 610 615 620

Thr Ala Glu Val Thr Val Val Ser Asp Gly Gly Gln Asn Ile Ala Val
 625 630 635 640

Ala Thr Thr Ala Pro Pro Val Phe Ser Ser Ser Ser Gln Gln Glu Leu
 645 650 655

Pro Lys Gln Thr Tyr Ser Ile Ile Gln Gly Ala Ala His Pro Ala Leu
 660 665 670

Leu Cys Pro Ala Asp Ser Ile Pro Asp
 675 680

<210> 26
 <211> 627
 <212> PRT
 <213> Homo sapiens
 <400> 26

Met Asn Ala Ser Ser Glu Gly Glu Ser Phe Ala Gly Ser Val Gln Ile
 1 5 10 15

Pro Gly Gly Thr Thr Val Leu Val Glu Leu Thr Pro Asp Ile His Ile
 20 25 30

Cys Gly Ile Cys Lys Gln Gln Phe Asn Asn Leu Asp Ala Phe Val Ala
 35 40 45

His Lys Gln Ser Gly Cys Gln Leu Thr Gly Thr Ser Ala Ala Ala Pro
 50 55 60

Ser Thr Val Gln Phe Val Ser Glu Glu Thr Val Pro Ala Thr Gln Thr
 65 70 75 80

Gln Thr Thr Thr Arg Thr Ile Thr Ser Glu Thr Gln Thr Ile Thr Gly
 85 90 95

Cys Gln Phe Lys Thr Ala Tyr Gly Met Lys Asp Met Glu Arg His Leu
 100 105 110

Lys Ile His Thr Gly Asp Lys Pro His Lys Cys Glu Val Cys Gly Lys
 115 120 125

Cys Phe Ser Arg Lys Asp Lys Leu Lys Thr His Met Arg Cys His Thr
 130 135 140

Gly Val Lys Pro Tyr Lys Cys Lys Thr Cys Asp Tyr Ala Ala Ala Asp
 145 150 155 160

Ser Ser Ser Leu Asn Lys His Leu Arg Ile His Ser Asp Glu Arg Pro
 165 170 175

Phe Lys Cys Gln Ile Cys Pro Tyr Ala Ser Arg Asn Ser Ser Gln Leu
 180 185 190

Thr Val His Leu Arg Ser His Thr Gly Asp Ala Pro Phe Gln Cys Trp
 195 200 205

Leu Cys Ser Ala Lys Phe Lys Ile Ser Ser Asp Leu Lys Arg His Met
 210 215 220

Arg Val His Ser Gly Glu Lys Pro Phe Lys Cys Glu Phe Cys Asn Val
 225 230 235 240

Arg Cys Thr Met Lys Gly Asn Leu Lys Ser His Ile Arg Ile Lys His
 245 250 255

Ser Gly Asn Asn Phe Lys Cys Pro His Cys Asp Phe Leu Gly Asp Ser
 260 265 270

Lys Ala Thr Leu Arg Lys His Ser Arg Val His Gln Ser Glu His Pro
 275 280 285

Glu Lys Cys Ser Glu Cys Ser Tyr Ser Cys Ser Ser Lys Ala Ala Leu
 290 295 300

Arg Ile His Glu Arg Ile His Cys Thr Asp Arg Pro Phe Lys Cys Asn
 305 310 315 320

Tyr Cys Ser Phe Asp Thr Lys Gln Pro Ser Asn Leu Ser Lys His Met
 325 330 335

Lys Lys Phe His Gly Asp Met Val Lys Thr Glu Ala Leu Glu Arg Lys
 340 345 350

Asp Thr Gly Arg Gln Ser Ser Arg Gln Val Ala Lys Leu Asp Ala Lys
 355 360 365

Lys Ser Phe His Cys Asp Ile Cys Asp Ala Ser Phe Met Arg Glu Asp
 370 375 380

Ser Leu Arg Ser His Lys Arg Gln His Ser Glu Tyr Ser Glu Ser Lys
 385 390 395 400

Asn Ser Asp Val Thr Val Leu Gln Phe Gln Ile Asp Pro Ser Lys Gln
 405 410 415

Pro Ala Thr Pro Leu Thr Val Gly His Leu Gln Val Pro Leu Gln Pro
 420 425 430

Ser Gln Val Pro Gln Phe Ser Glu Gly Arg Val Lys Ile Ile Val Gly
 435 440 445

His Gln Val Pro Gln Ala Asn Thr Ile Val Gln Ala Ala Ala Ala Ala
 450 455 460

Val Asn Ile Val Pro Pro Ala Leu Val Ala Gln Asn Pro Glu Glu Leu
 465 470 475 480

Pro Gly Asn Ser Arg Leu Gln Ile Leu Arg Gln Val Ser Leu Ile Ala
 485 490 495

Pro Pro Gln Ser Ser Arg Cys Pro Ser Glu Ala Gly Ala Met Thr Gln
 500 505 510

Pro Ala Val Leu Leu Thr Thr His Glu Gln Thr Asp Gly Ala Thr Leu
 515 520 525

His Gln Thr Leu Ile Pro Thr Ala Ser Gly Gly Pro Gln Glu Gly Ser
 530 535 540

Gly Asn Gln Thr Phe Ile Thr Ser Ser Gly Ile Thr Cys Thr Asp Phe
 545 550 555 560

Glu Gly Leu Asn Ala Leu Ile Gln Glu Gly Thr Ala Glu Val Thr Val
 565 570 575

Val Ser Asp Gly Gly Gln Asn Ile Ala Val Ala Thr Thr Ala Pro Pro
 580 585 590

Val Phe Ser Ser Ser Ser Gln Gln Glu Leu Pro Lys Gln Thr Tyr Ser

595 600 605
 Ile Ile Gln Gly Ala Ala His Pro Ala Leu Leu Cys Pro Ala Asp Ser
 610 615 620

 Ile Pro Asp
 625

 <210> 27
 <211> 681
 <212> PRT
 <213> Homo sapiens

 <400> 27

 Met Asn Ala Ser Ser Glu Gly Glu Ser Phe Ala Gly Ser Val Gln Ile
 1 5 10 15

 Pro Gly Gly Thr Thr Val Leu Val Glu Leu Thr Pro Asp Ile His Ile
 20 25 30

 Cys Gly Ile Cys Lys Gln Gln Phe Asn Asn Leu Asp Ala Phe Val Ala
 35 40 45

 His Lys Gln Ser Gly Cys Gln Leu Thr Gly Thr Ser Ala Ala Ala Pro
 50 55 60

 Ser Thr Val Gln Phe Val Ser Glu Glu Thr Val Pro Ala Thr Gln Thr
 65 70 75 80

 Gln Thr Thr Thr Arg Thr Ile Thr Ser Glu Thr Gln Thr Ile Thr Val
 85 90 95

 Ser Ala Pro Glu Phe Val Phe Glu His Gly Tyr Gln Thr Tyr Leu Pro
 100 105 110

 Thr Glu Ser Asn Glu Asn Gln Thr Ala Thr Val Ile Ser Leu Pro Ala
 115 120 125

 Lys Ser Arg Thr Lys Lys Pro Thr Thr Pro Pro Ala Gln Lys Arg Leu
 130 135 140

 Asn Cys Cys Tyr Pro Gly Cys Gln Phe Lys Thr Ala Tyr Gly Met Lys
 145 150 155 160

 Asp Met Glu Arg His Leu Lys Ile His Thr Gly Asp Lys Pro His Lys
 165 170 175

Cys Glu Val Cys Gly Lys Cys Phe Ser Arg Lys Asp Lys Leu Lys Thr
 180 185 190

His Met Arg Cys His Thr Gly Val Lys Pro Tyr Lys Cys Lys Thr Cys
 195 200 205

Asp Tyr Ala Ala Ala Asp Ser Ser Ser Leu Asn Lys His Leu Arg Ile
 210 215 220

His Ser Asp Glu Arg Pro Phe Lys Cys Gln Ile Cys Pro Tyr Ala Ser
 225 230 235 240

Arg Asn Ser Ser Gln Leu Thr Val His Leu Arg Ser His Thr Gly Asp
 245 250 255

Ala Pro Phe Gln Cys Trp Leu Cys Ser Ala Lys Phe Lys Ile Ser Ser
 260 265 270

Asp Leu Lys Arg His Met Arg Val His Ser Gly Glu Lys Pro Phe Lys
 275 280 285

Cys Glu Phe Cys Asn Val Arg Cys Thr Met Lys Gly Asn Leu Lys Ser
 290 295 300

His Ile Arg Ile Lys His Ser Gly Asn Asn Phe Lys Cys Pro His Cys
 305 310 315 320

Asp Phe Leu Gly Asp Ser Lys Ala Thr Leu Arg Lys His Ser Arg Val
 325 330 335

His Gln Ser Glu His Pro Glu Lys Cys Ser Glu Cys Ser Tyr Ser Cys
 340 345 350

Ser Ser Lys Ala Ala Leu Arg Ile His Glu Arg Ile His Cys Thr Asp
 355 360 365

Arg Pro Phe Lys Cys Asn Tyr Cys Ser Phe Asp Thr Lys Gln Pro Ser
 370 375 380

Asn Leu Ser Lys His Met Lys Lys Phe His Gly Asp Met Val Lys Thr
 385 390 395 400

Glu Ala Leu Glu Arg Lys Asp Thr Gly Arg Gln Ser Ser Arg Gln Val
 405 410 415

Ala Lys Leu Asp Ala Lys Lys Ser Phe His Cys Asp Ile Cys Asp Ala
 420 425 430

Ser Phe Met Arg Glu Asp Ser Leu Arg Ser His Lys Arg Gln His Ser
 435 440 445

Glu Tyr Ser Glu Ser Lys Asn Ser Asp Val Thr Val Leu Gln Phe Gln
 450 455 460

Ile Asp Pro Ser Lys Gln Pro Ala Thr Pro Leu Thr Val Gly His Leu
 465 470 475 480

Gln Val Pro Leu Gln Pro Ser Gln Val Pro Gln Phe Ser Glu Gly Arg
 485 490 495

Val Lys Ile Ile Val Gly His Gln Val Pro Gln Ala Asn Thr Ile Val
 500 505 510

Gln Ala Ala Ala Ala Val Asn Ile Val Pro Pro Ala Leu Val Ala
 515 520 525

Gln Asn Pro Glu Glu Leu Pro Gly Asn Ser Arg Leu Gln Ile Leu Arg
 530 535 540

Gln Val Ser Leu Ile Ala Pro Pro Gln Ser Ser Arg Cys Pro Ser Glu
 545 550 555 560

Ala Gly Ala Met Thr Gln Pro Ala Val Leu Leu Thr Thr His Glu Gln
 565 570 575

Thr Asp Gly Ala Thr Leu His Gln Thr Leu Ile Pro Thr Ala Ser Gly
 580 585 590

Gly Pro Gln Glu Gly Ser Gly Asn Gln Thr Phe Ile Thr Ser Ser Gly
 595 600 605

Ile Thr Cys Thr Asp Phe Glu Gly Leu Asn Ala Leu Ile Gln Glu Gly
 610 615 620

Thr Ala Glu Val Thr Val Val Ser Asp Gly Gly Gln Asn Ile Ala Val
 625 630 635 640

Ala Thr Thr Ala Pro Pro Val Phe Ser Ser Ser Ser Gln Gln Glu Leu
 645 650 655

Pro Lys Gln Thr Tyr Ser Ile Ile Gln Gly Ala Ala His Pro Ala Leu
660 665 670

Leu Cys Pro Ala Asp Ser Ile Pro Asp
675 680

<210> 28
<211> 226
<212> PRT
<213> Mus musculus

<400> 28

Pro Phe Pro Gly Ser Arg Gly Pro Gln Leu Phe Gly Leu Ser Arg Pro
1 5 10 15

Ala Gly Pro Pro Leu His Gly Pro Val Cys Gln Arg Cys Val Arg Arg
20 25 30

Pro Val Pro Arg Ser Gly Arg Ala Pro Thr Leu Arg Pro Ser Ser Arg
35 40 45

Ser Arg Val Ser Arg Arg Pro Arg Asp Asp Gly Val Val Ala Leu Thr
50 55 60

Gly Ala Gly Gly Cys Arg Ala Pro Arg Ala Gly Met Ala Gly Gln Phe
65 70 75 80

Arg Ser Tyr Val Trp Asp Pro Leu Leu Ile Leu Ser Gln Ile Val Leu
85 90 95

Met Gln Thr Val Tyr Tyr Gly Ser Leu Gly Leu Trp Trp Arg Trp Trp
100 105 110

Thr Arg Trp Cys Ala Gln Pro Val Pro Gly Pro Asp Val Arg Arg Gly
115 120 125

Asp Pro Gly Leu Leu His Pro Ser Arg Pro Ala Leu Asn Asp Val Leu
130 135 140

Arg Pro Gln Arg Pro His Leu Cys Pro Gly Leu Ala Val Leu His Pro
145 150 155 160

Ala Arg Glu Ala Val Pro Gly Phe His Cys His Cys Ala Phe Leu Ser
165 170 175

Pro Pro Gly Leu Leu Ala Leu Gln Leu Pro Phe Pro Leu Gly Ala Asp
180 185 190

Leu Val Ala Gly Pro Gly Cys Val His Cys Thr His Gly Arg His Arg
 195 200 205

Gly Val Pro Val His Ala Asp Gly Ala Gln Gly Asp Pro Pro Gln Leu
 210 215 220

Ser Pro
 225

<210> 29
 <211> 151
 <212> PRT
 <213> Mus musculus

<400> 29

Met Ala Gly Gln Phe Arg Ser Tyr Val Trp Asp Pro Leu Leu Ile Leu
 1 5 10 15

Ser Gln Ile Val Leu Met Gln Thr Val Tyr Tyr Gly Ser Leu Gly Leu
 20 25 30

Trp Leu Ala Leu Val Asp Ala Leu Val Arg Lys Pro Val Pro Gly Pro
 35 40 45

Asp Val Arg Arg Gly Asp Pro Gly Leu Leu His Pro Ser Arg Pro Ala
 50 55 60

Leu Asn Asp Val Leu Arg Pro Gln Arg Pro His Leu Cys Pro Gly Leu
 65 70 75 80

Ala Val Leu His Pro Ala Arg Glu Ala Val Pro Gly Phe His Cys His
 85 90 95

Cys Ala Phe Leu Ser Pro Pro Gly Leu Leu Ala Leu Gln Leu Pro Phe
 100 105 110

Pro Leu Gly Ala Asp Leu Val Ala Gly Pro Gly Cys Val His Cys Thr
 115 120 125

His Gly Arg His Arg Gly Val Pro Val His Ala Asp Gly Ala Gln Gly
 130 135 140

Asp Pro Pro Gln Leu Ser Pro
 145 150

<210> 30
 <211> 428
 <212> PRT
 <213> Homo sapiens

<400> 30

Met Asp Val Val Asp Ser Leu Leu Val Asn Gly Ser Asn Ile Thr Pro
 1 5 10 15

Pro Cys Glu Leu Gly Leu Glu Asn Glu Thr Leu Phe Cys Leu Asp Gln
 20 25 30

Pro Arg Pro Ser Lys Glu Trp Gln Pro Ala Val Gln Ile Leu Leu Tyr
 35 40 45

Ser Leu Ile Phe Leu Leu Ser Val Leu Gly Asn Thr Leu Val Ile Thr
 50 55 60

Val Leu Ile Arg Asn Lys Arg Met Arg Thr Val Thr Asn Ile Phe Leu
 65 70 75 80

Leu Ser Leu Ala Val Ser Asp Leu Met Leu Cys Leu Phe Cys Met Pro
 85 90 95

Phe Asn Leu Ile Pro Asn Leu Leu Lys Asp Phe Ile Phe Gly Ser Ala
 100 105 110

Val Cys Lys Thr Thr Thr Tyr Phe Met Gly Thr Ser Val Ser Val Ser
 115 120 125

Thr Phe Asn Leu Val Ala Ile Ser Leu Glu Arg Tyr Gly Ala Ile Cys
 130 135 140

Lys Pro Leu Gln Ser Arg Val Trp Gln Thr Lys Ser His Ala Leu Lys
 145 150 155 160

Val Ile Ala Ala Thr Trp Cys Leu Ser Phe Thr Ile Met Thr Pro Tyr
 165 170 175

Pro Ile Tyr Ser Asn Leu Val Pro Phe Thr Lys Asn Asn Asn Gln Thr
 180 185 190

Ala Asn Met Cys Arg Phe Leu Leu Pro Asn Asp Val Met Gln Gln Ser
 195 200 205

Trp His Thr Phe Leu Leu Leu Ile Leu Phe Leu Ile Pro Gly Ile Val

210		215		220
Met Met Val Ala Tyr Gly Leu Ile Ser Leu Glu Leu Tyr Gln Gly Ile				
225		230	235	240
Lys Phe Glu Ala Ser Gln Lys Lys Ser Ala Lys Glu Arg Lys Pro Ser				
	245		250	255
Thr Thr Ser Ser Gly Lys Tyr Glu Asp Ser Asp Gly Cys Tyr Leu Gln				
	260	265		270
Lys Thr Arg Pro Pro Arg Lys Leu Glu Leu Arg Gln Leu Ser Thr Gly				
	275	280		285
Ser Ser Ser Arg Ala Asn Arg Ile Arg Ser Asn Ser Ser Ala Ala Asn				
	290	295	300	
Leu Met Ala Lys Lys Arg Val Ile Arg Met Leu Ile Val Ile Val Val				
305		310	315	320
Leu Phe Phe Leu Cys Trp Met Pro Ile Phe Ser Ala Asn Ala Trp Arg				
	325		330	335
Ala Tyr Asp Thr Ala Ser Ala Glu Arg Arg Leu Ser Gly Thr Pro Ile				
	340	345		350
Ser Phe Ile Leu Leu Leu Ser Tyr Thr Ser Ser Cys Val Asn Pro Ile				
	355	360		365
Ile Tyr Cys Phe Met Asn Lys Arg Phe Arg Leu Gly Phe Met Ala Thr				
	370	375	380	
Phe Pro Cys Cys Pro Asn Pro Gly Pro Pro Gly Ala Arg Gly Glu Val				
385		390	395	400
Gly Glu Glu Glu Glu Gly Gly Thr Thr Gly Ala Ser Leu Ser Arg Phe				
	405		410	415
Ser Tyr Ser His Met Ser Ala Ser Val Pro Pro Gln				
	420	425		